



Hosting a BOPAE Collection Event



**Tennessee Department of Environment & Conservation
Division of Solid Waste Management
Household Hazardous Waste Program
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Batteries, oil, paint, antifreeze, and electronics, collectively called BOPAE, comprise about 85% of the waste brought into the Household Hazardous Waste Events.



Background:

Batteries, oil, paint, antifreeze, and electronics, collectively called BOPAE, comprise about 85% of the waste brought into the Household Hazardous Waste Events. When handled correctly these materials are only slightly hazardous and local management can reduce state household hazardous waste costs by 40%.

Tennessee began promoting BOPAE collection events in 2007 to supplement the existing Household Hazardous Waste Program by providing additional free disposal options for residents at minimal cost to the State. The money saved by excluding BOPAE materials from the HHW Program can be used to collect the more hazardous materials across the state, potentially funding additional HHW Events.

Unlike the mobile HHW collection program where the State has the leading role, most of the responsibilities (and costs) at BOPAE events are placed on the county or city. The State's role at BOPAE events is primarily to provide guidance and to pay for the disposal of the oil-based paint, reactive batteries, and other materials preapproved by the state.

Procedures and Considerations:

It is recommended to host the BOPAE event at an existing oil collection site to avoid some of the regulations related to transporting used oil and oil-based paint. Once a suitable date and location has been selected, contact the HHW coordinator to make arrangements for the disposal of the oil-based paint and reactive batteries. Next, it is important to find markets or management solutions for your batteries, used oil, latex paint, antifreeze, and electronics. Vendors often provide containers (i.e. drums, totes, cubic yard boxes, pallets, buckets) upon request. The next step is to recruit adult volunteers or commit staff to unload cars and direct traffic at the event. They should be instructed to arrive early to attend a health and safety meeting. It is important to discuss what will be accepted at the collection and what will not be accepted. Particularly important is to explain that certain waste streams not being accepted at the collection should be rejected to prevent reactions with incompatibles. The volunteers should wear nitrile gloves (or leather gloves if they are only handling escrap), closed-toe shoes, long pants, and safety glasses. Additionally, drum funnels, ground poly, and oil absorbent are recommended to keep your collection site clean. Finally, a tow motor (fork-lift) may be needed in order to move containers and pallets and shrink wrap will be needed to secure loads.

Successful events require sufficient advertising and media coverage. Appendix A provides an example of a press release. Advertisements and blurbs on television, radio, and in newspapers have proven to be effective means of promoting collection events. Other forms of media have worked as well: flyers, bookmarks, banners, newsletters, e-mails, and church bulletins.

Batteries:

While wearing nitrile gloves, batteries should be sorted for recycling or disposal according to chemical make-up. The Mercury Containing Battery Management Act was passed in 1996 banning the sale of alkaline batteries containing mercury. It is considered that any legacy batteries sold prior 1996 have been disposed and reached their final destination. Therefore spent alkaline batteries generated today can be safely disposed of in the garbage..

Rechargeable batteries such as nickel cadmium (NiCd), nickel-metal hydride (NiMH), lithium ion (Li ion) and small sealed lead-acid batteries (Pb) exhibit hazardous characteristics and should be recycled. The Rechargeable Battery Recycling Corporation (www.rbrcc.org) offers a free mail-back battery recycling program. Each rechargeable battery should be placed individually in a plastic bags or the nodes taped. Larger lead-acid batteries (Pb) from cars, motorcycles, tractors, etc. contain corrosive and toxic substances and should be palletized with layers of cardboard placed in between rows and shrink wrapped for the recycler. Fortunately, lead-acid batteries have value and can be sold to battery dealers for several dollars a piece.

Non-rechargeable lithium batteries (Li) such as those found in some cameras are reactive and will be managed by the State contractor on a milk run pick up. Button batteries, like those found in watches and hearing aids, may contain toxic or reactive chemicals and will be managed by the State contractor. Electrical tape should be applied to the electrodes of the non-rechargeable lithium and button batteries. Examples of each battery type can be found in Appendix B.

Oil:

To avoid the regulations of transporting used motor oil, it is advisable to host the BOPAE event at an existing used oil collection center. Used oil can be bulked into drums, totes, or the existing collection container. To prevent spills when bulking in drums or totes, the use of a drum funnel is recommended. Additionally, checking the fluid level occasionally will reduce the chance of overflowing the container. Absorbent materials (spill pads, oil dry, etc.) should be with in reach in case of a spill. The person bulking used oil should wear closed toe shoes, pants, a long-sleeved shirt, nitrile gloves, and eye protection (goggles or a face shield and safety glasses). Used oil has value can be recycled at no cost. A listing oil used oil transporters is available by calling the used oil hotline, 1-800-287-9013.



Paint:

All paint must be separated according to type (latex or solvent based by reading the label. Do not collect aerosols, paint thinners, industrial coatings, or other household hazardous waste. These substances are hazardous and should only be handled by a certified hazardous waste handler under the right conditions. The terms alkyd or oil-based refers to solvent based paint while water-based paint or water clean up refers to latex. Alkyd or oil-based paint should be left in original containers and neatly stacked in lined cubic yard boxes to avoid spills and prevent leaks. Liners and boxes will be provided by the HHW contractor. If a container leaks, an absorbent should be poured into the bottom of the box. Care should be taken to keep the boxes dry until the HHW contractor can pick them up. A forklift will be needed moving and loading pallets of paint.

BOPAE collection events reduce the amount of minimally hazardous materials that are brought to HHW events. The money saved can be used for funding additional HHW events across the state.



Management of the latex paint is the responsibility of the host county. Latex paint can be consolidated into buckets or drums and reused. A permit by rule modification is not necessary for this option. A second option for latex paint management is solidification. A permit by rule modification is required if this option is chosen. For more detailed information on paint management, please review the publication, *Household Paint Management Guidance*.

Antifreeze:

Antifreeze should be bulked into drums or the existing collection container at the year round collection site. To prevent spills when bulking in drums or totes, the use of a drum funnel is recommended. Additionally, checking the fluid level occasionally will reduce the chance of overflowing the container.

Absorbent material (spill pads, kitty litter, etc.) should be easily accessible in case of a spill. The person bulking should wear closed-toe shoes, pants, a long-sleeved shirt, nitrile gloves, and eye protection (goggles or a face shield and safety glasses). Some used oil transporters will pick up antifreeze as well. Contact the used oil hotline, 1-800-287-9013, for a listing of permitted transporters or antifreeze recyclers.

Electronics:

The volunteers or staff assigned to unload and stack electronics should wear safety glasses, closed-toe shoes, and leather gloves. Larger electronics such as computers, televisions, CRT monitors, etc. should be palletized and secured with shrink wrap. Equipment with cathode ray tubes should be placed side by side with the screen down on a pallet. Cardboard should be placed in between the layers to provide support for the next layer. This method maximizes space and safely allows up to 5 rows high. Smaller electronics (keyboards, mice, flat screen monitors, printers, etc.) should be placed in unlined cubic yard boxes. Most vendors provide supplies upon request. Necessary supplies include pallets, flattened cardboard, cubic yard boxes, shrink wrap, and a forklift for moving and loading pallets.

Summary:

BOPAE collection events reduce the amount of minimally hazardous materials that are brought to HHW events. The money saved can be used for funding additional HHW events across the state. BOPAE events also give residents additional opportunities to recycle batteries, oil, paint, antifreeze and electronics. The Division of Solid Waste Management is constantly seeking programs to promote waste reduction. The HHW staff is available to discuss in more detail safe and successful BOPAE collection events or year round collection. These programs will be successful if they are well managed and advertised.

Sevier County Extreme Home Clean Up



Excellent use of ground poly and a sorting table for paint. Propane cylinders are palletized, shrink wrapped, and recycled for free by Blue Rhino.



The amount of paint will be similar to past HHW collections and approximately 75% will be latex. Empty paint cans, oil bottles, and joint compound will quickly fill a trash container. Therefore, a cardboard recycling container is recommended as well as a contingency plan for hauling off containers as they become full.



The use of drum funnels is recommended to prevent spills but oil absorbents should always be within reach.

Appendix 1

Rechargeable

-County manages through the Rechargeable Battery Recycling Corporation (www.rbrcc.org)



Lithium-Ion (L-ion)

-come in many shapes. ex. cellular phones, cordless drills, laptop computers, etc.



Nickel-Cadmium (Ni-Cd)

-come in many shapes. ex. cordless drills, general purpose sizes, etc.



Nickel-Metal Hydride (Ni-MH)

-come mostly in general purpose sizes

Reactive

- manage through contractor
- lithium batteries are reactive.
- button batteries could be composed of reactive or toxic materials.



Lithium
-comes in cameras



Lithium
-comes in cameras



Button battery
-come in many sizes
-found in hearing aids, musical cards, some toys, and watches

Non-Toxic

-throw away

-made of non-toxic materials such as zinc, carbon, and manganese



Alkaline



Alkaline-notice how it looks like a lithium



Heavy Duty
(or super heavy duty)
(or carbon-zinc)

Appendix 2

<date>

Contact: <name>

<phone number>

Release: For Immediate Release

Subject: Disposal of problem waste

RID YOUR HOME OF NUISANCE MATERIALS

<Name> County is hosting a collection event for batteries, oil, paint, antifreeze, and electronics on Saturday, <date> from <time> to <time> at <location>. These materials, collectively called BOPAE, comprise about 85% of the waste brought into the Household Hazardous Waste Events. These materials, when handled correctly, are only slightly hazardous and inappropriate for collection at Household Hazardous Waste (HHW) Events if other collection opportunities exist.

Tennessee began promoting BOPAE collection events in 2007 to supplement the existing Household Hazardous Waste program by providing additional free disposal options for residents at minimal cost to the State. The money saved by diverting BOPAE materials from the HHW Program can be used to collect the more hazardous materials across the state, potentially funding additional HHW Events.

While BOPAE materials are considered only mildly hazardous, they do exhibit some characteristics that prevent them from being disposed of with the regular garbage. Some batteries have corrosive, toxic, and/or reactive properties. Automotive fluids such as used motor oil and most antifreezes are toxic. Oil-based paints are flammable. Electronics often have toxic components. Robert Wadley with Tennessee's HHW program says, "Proper storage and disposal is the key. Most problems caused by these materials could be avoided if the material had been stored and disposed of correctly." For instance, the best containers for storing used motor oil are drain pans with lids or containers with a pour spout and closed lid. The best way to store small batteries is in individual baggies and large batteries in plastic lined boxes. Oil based paint should be stored in their original container provided the can is still in good shape. Electronics should be kept dry and stored low to the ground to prevent the chance of injury in case they fall over. To further reduce the chance of accidental injuries, it is advisable to buy the right amount of BOPAE materials, use all that you buy, and safely store the material until the BOPAE collection event.

For more information about the BOPAE Collection, call <contact name> at <phone number> This event is sponsored by <county name> County and the Tennessee Department of Environment and Conservation.